

ECAD7004C

Researching The Learning: What, How and Why am I Teaching?

Design, conduct and critically evaluate a close-to-practice research project (lesson study) focusing on the model of the transformative teacher in developing practice that has a positive impact on the learner

What effect does grouping students have on their pedagogical development?

Targets:

1. Link theory to practice through researching and reading more. Prepare notes with links made before starting the report.
2. Watch for use of apostrophes with duplicate words, corrected after reviewing the assignment.

Actions:

1. Include more literature in my work in a less descriptive manner while also preparing section notes.
2. Revise the rules for using apostrophes and when it is necessary to include them. Ensure they are not misused throughout the report.

Introduction

This research paper discusses how seating arrangements in the classroom can affect the ability of the pupil to learn and produce in day to day lessons, as classrooms in schools now seat pupils differently depending on ability, age and social behaviour. This topic was agreed on by the practitioners to assess its effect on pupil attainment. In 1997, the DfEE suggested that schools should consider 'setting' pupils by ability as it would contribute towards raised standards according to Hallam (2010), which raises the question, does grouping students effect their pedagogical development?

To undertake thorough research with accurate and reliable results the same lesson was delivered in three different schools, [REDACTED], with seating

arrangements for all three lessons being the only flexible variable. Hornby (2011) suggests seating arrangements are important in a classroom setting due to their potential to help prevent behavioural problems that decrease student attention and diminish available instructional time, a theory also supported by Pace and Price (2005). Specialists such as Roberts (2016) prefer alternative arrangements as they believe ability grouping is solely for classroom management and does not benefit the pupils academically.

After discussion it was decided from the outset that one class would be re-arranged to sit in similar age groups, another sitting based on ability and the final class sitting amongst social peers. The objective was to understand how these arrangements would affect the quantity and quality of work the pupils produced as well as their emotional state, health and well-being. These were assessed through Assessment for Learning strategies and questionnaires.

When researching grouping children in the classroom and how they are seated four reasons are commonly spoken about:

1. Collaboration in learning within groups of children.
2. Ability grouping or setting within a class.
3. Small group teaching
4. Access to resources which, when placed in the centre of a group table, can be reached by all. (Hastings and Wood, 2002)

This project was carried out by myself and two other practitioners, taking turns to teach and observe in our PTE1 schools.

Context

It is important to give an explanation on the three schools that were involved in this research project. The schools will be labelled school 1, 2 and 3.

School 1 is a very small school in a deprived rural town where KS2 were taught as one class and therefore the ability of the pupils varied greatly, this made it very easy to choose seating the pupils by age as our factor.

School 2 is a small school in a rural town. During the study we observed a class of year 4 and 5 combined, with one pupil suffering from severe ALN (Additional Learning Needs). This class was seated based on ability.

School 3 is located in a largely populated town just outside a city with the class being observed consisting of a combination of Year 3 and 4, with the overachieving year 3 students producing the same work as the less able year 4 students. In this class pupils were able to sit amongst peers.

Three pupils were chosen from each class as the focus of the observation with each pupil providing their own consent and consent forms from parents and/or guardians. These pupils had the right to withdraw at any point during the lesson. The same numeracy lesson was taught in each school to ensure that this was a fair experiment although we must consider certain factors are out of our control such as resources, behavioural issues and any intervention by school faculty.

Methodology

“By observing children while they are involved in activities, practitioners will find out how the children’s skills are developing and what they are able to do. Practitioners will also be able to gather information on what the children know and understand, as well as their personal preferences.” (Welsh Assembly Government, 2008).

Estyn (2020) supports this idea, expressing how practitioners improving their own knowledge and understanding has a direct impact on their own standards when teaching, as well as pupils standards and achievements, a theory further supported by specialists such as Hill (2013) and Hobart and Frankel (2009).

Before conducting the observation, it was important to establish with the other practitioners the ability and characteristics of the children being observed in the lesson. Establishing this allowed the accurate assessment of the work pupils produced as well as their general attitude and behaviour in the lesson.

It is important to remember that during the observation we are able to analyse and assess what is going on in this environment and control the factor we have chosen to adjust and observe, but we must remember and consider other factors will be out of our control and that this can sometimes alter the results of the research. This is described by Sharman et al (2007) who said:

“Observation is like a camera shot, and although it is said that the camera does not lie, it may distort”. It is easy to jump to conclusions with results and data believing it is merely ‘black and white’, but often there is failure to see the bigger picture or finer details.

It is also paramount that we understand why we are conducting research and what information we gather. Kumar (2014) explains how research is carried out in five steps:

Question what you observe, further explore, understand and explain, draw conclusions and enhance practice. People often associate research as a set of skills while it is also a way of thinking. All research is carried out so that we can enhance our practice and improve pupils' knowledge base.

In this research project we decided on four key observation methods:

Running Records – An observation method/strategy where the practitioner notes down what they see and what the child says or does as it is happening. Notes are usually written in past tense and are detailed (Veale and Piscitelli 1992).

Jottings – This method is as simple as noting bullet points and brief sentences of important events, conversations and behaviours. Jotting breaks down observation into their most elemental parts and captures the weight of each idea (Rutter 2010).

Work Samples – Work Sampling, a low stake, non-stigmatizing system, relies on extensive sampling of children's academic, personal, and social progress over the school year. It provides a rich source of information about student strengths and weaknesses. Images of the work the child produced is an accurate way of understanding whether the learner has underachieved, maintained their standard or exceeded their expectations during this lesson. (Meisels 1997)

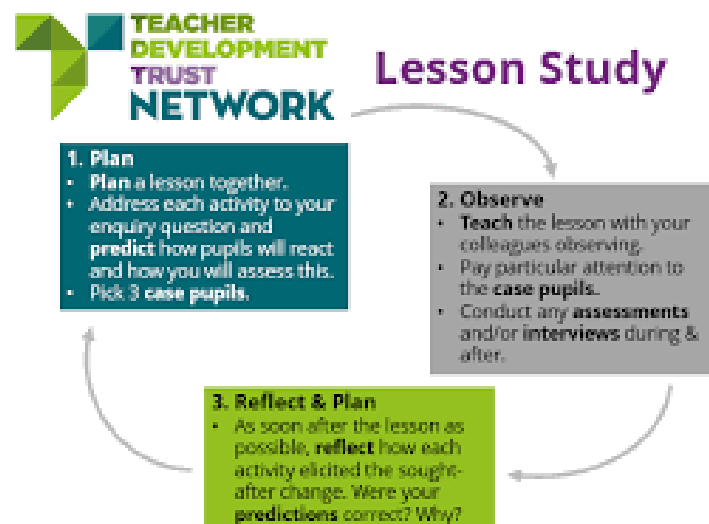
Group Interviews – Folch Lyon and Trost (1981) indicate that focus group interviews can assist in explaining how and why people behave as they do. Focus groups also provide the means to probe people's emotional reactions to issues (Vaughn 1996).

Interviewing the children in groups allows them to feel more relaxed during the process as they are amongst fellow peers but at such a young age one problem that may occur through group interviewing is that some pupils will give the same answers as their peers instead of voicing their own feelings and opinions.

To gain accurate results from this research project it was important to plan and discuss as a group to prepare ahead of the lessons. We decided on what questions we thought were important to collect the relevant data and ones where information and outcomes could be affected through varying seating arrangements. Each pupil received the same nine questions to answer. Refer to appendix 4 to see the type of questions each pupil was asked. Many of the questions query the quality and quantity of work the children have produced in comparison to responses given in their usual lesson format. The questions also take account of pupils' feelings, emotions and concerns for their health and well-being which Donaldson highlights is vital within 'Successful Futures' (2015).

The most important factor which allowed this project to take place was the consent of the pupils and their parents/guardians. As a group we wrote a letter of consent explaining details of how the children would be observed, how and what notes would be made, and if there would be use of any devices such as a voice recorder or video evidence. Refer to appendix 3 for consent forms.

Gathering information in this way is called a lesson study. Lesson studies are a specific method of teacher-led research. This method has been introduced to the United Kingdom for some time and is integrated through the National College for Teaching and Leadership. In pairs or in small groups, practitioners, teachers, and experts plan, teach and observe many lessons with one factor of each lesson changing. After collecting the relevant data, they compare this with any pre-existing research. (TDT.org, 2015)



(Figure 1)

As displayed in figure 1 there are three main stages to this study model. It is important to plan and structure everything as a team to ensure that everyone has the same interpretation and that all factors but one remain the same in lessons delivered. Researchers each took turns rotating between teaching and observing.

For this project I observed the allocated practitioners teaching in schools 1 and 2 and was the allocated practitioner teaching in school 3 to a year 3 and 4 class. Dewey (1991) discusses the effect practitioners observing can have on the behaviour and attention of

pupils and therefore sees this method as flawed, expressing it should be carried out over a longer period of time so the practitioners are not an anomaly. Brodie (2013) disagrees and views this method of observation as effective for reflection as more data and details are collected to reflect upon.

Thanks to previous research projects, existing literature and preparation for critical incident research, as practitioners we were aware of how to observe the lessons taught. This also gave us a better understanding on the importance of reflective practice. To enable teachers to critically question their assumptions and deepen awareness reflection is key. This allows teachers and practitioners to maintain an open mindset and understanding that all teaching is an opportunity to learn. Marshall and Rossman (1989) define observation as "the systematic description of events, behaviour, and artifacts in the social setting chosen for study" (p.79). Observations enable the researcher to describe existing situations using the five senses, providing a "written photograph" of the situation under study according to Erlandson, Harris, Skipper, & Allen (1993). These pieces of literature emphasise the importance of reflective practice from observation.

Demunck and Sobo (1998) describe participant observation as the primary method used by anthropologists doing fieldwork. Fieldwork involves "active looking, improving memory, informal interviewing, writing detailed field notes, and perhaps most importantly, patience" (DeWalt, 2002, p.vii). Participant observation is the process enabling researchers to learn about the activities of the people under study in the natural setting through observing and participating in those activities. It provides the context for development of sampling guidelines and interview guides (DeWalt, 2002). (Kawulich, 2005)

The lessons taught were numeracy lessons focusing on problem solving, using the Wales Vs Italy Six Nations game as a topic to grasp the pupils' interest and inspire them to produce work. Examples of pupils' work can be found in appendix 4.

Ethical Consideration

Ethics are closely associated with morals and involve embracing moral issues in the context of working with humans (Gregory, 2003). It is unprofessional and unethical to conduct any research without due regards to ethical issues and consent from any involved parties and this must always be prioritised.

It was important as researchers to be critically aware of any ethical risks that could potentially occur during our study. An ethics form was created and completed before sending these letters off to the schools in partnership with the University.

The consent forms (appendix 3) and the ethics form also discuss the dissemination of data. This was explained to the participants at the start of every lesson and before the group interviews to ensure they had an understanding that information and data was recorded confidentially.

BERA (2018) recommend that researchers bring these ethical guidelines to the attention of those they work with such as, participants, stakeholders, sponsors and commissioners of research, schools and other organisations. Using these guidelines along with others provided by the PCYDDS and Education Workforce Council (2019) allowed us to ensure the safety and safeguarding of all pupils and participants sensitive information, health and well-being.

Lesson Studies

Students spend a large amount of time in a classroom, where desks are arranged in a specific way and individual seats are determined by the teacher. At the beginning of the school year, as part of classroom management, teachers face the question of how and where to seat their students. Van Den Berg et al. (2012) discusses the importance of this decision, as classroom seating arrangements influence classroom climate and students' relationships with each other, further explaining the stimulus seating arrangement has towards better academic and social development. Gest and Rodkin (2011) agree while Denton (1992) suggests physical space inside the classroom has a significant impact on teachers' and pupil's attitude towards school. McKeown et al (2015) suggests that different teachers have different considerations when arranging a class resulting in inconsistency, and that more research and literature will help future teachers decide on the important factors when planning seating arrangements in the future.

This allows us to understand that the children are comfortable with the arrangements in class currently as this is normal for them, therefore any changes may upset some pupils. This is a factor in our decision not to carry out any seating changes on pupils who will find it difficult due to any reason they may have such as additional learning needs (Schoon, 2003).

Lesson Study 1 – School 1

During this lesson study all pupils were moved and seated in age groups, they were not familiar with this seating arrangement as they are familiar to being seated based on their ability.

Katz, Evangelou and Hartman (1990, p.10) said “Although humans are not usually born in litters, we seem to insist that they be educated in them.” – This reference creates ideas and opinions on grouping-by-age, allowing practitioners to question why certain schools persist on using conventional grouping methods as they may not meet individual needs. (Greenfield, R. LI. 2011)

When analysing the lessons success, we could see using appropriate assessment for learning methods that the majority of pupils were pleased and understood the aims of the lesson but we were unsure of how they benefited academically from the lesson. There were noticeable differences from the observation and the group interviews which allowed us to compare how this seating arrangement affected the pupils academically and emotionally.

Reading over appendix 5i there are noticeable similarities and connections between the summarised notes of each child describing how Pupil A, B and C all listened to the instructions and agreed they understood what they had been told. An independent task was changed to a group task due to lack of mathematical resources. They worked in pairs making it difficult to acquire accurate data. Once they began the task it was immediately clear who was leading.

Pupil B allowed pupils A and C to complete the work for her. After a series of questions Pupil A decided to complete the remaining questions on her own, not needing the resources and forcing Pupil B to work with Pupil C as she was disheartened by completing the worksheet while Pupil B and C did not contribute. Pupil C showed a great understanding of the task and how to correctly use the resources and attempted to help and teach pupil B once pupil A began working individually. When pupil B attempted to complete the questions she was unable to do so. This was the reoccurring theme throughout the lesson even when the teacher went over examples with the class pupil B struggled, however she did gain some understanding once given further instructions by the teacher and practitioners. Pupils A and C became uninterested with the work, which Katz (2008) explains is an outcome of work being too easy or difficult for individuals, causing them boredom or frustration, leading to a lack of interest. The pupils' answers suggest Pupil A and C both became uninterested with work due to pupil B's lack of effort with pupil C eventually working individually.

If we then compare the observation notes with the answers the students provided in appendix 5i we begin to make the connections between what the pupil produced, said and felt. The first thing to reflect upon was how the new seating arrangements made the pupils feel and why, the answers were no surprise as pupil B and C were happy as they were able to sit next to their peers. I believe that pupil A and C completing majority of the work played a big part in pupil B's eagerness to continue this arrangement. Pupil A felt differently and would rather be seated in the classes usual arrangements as she did not find the work challenging enough and found herself constantly doing the work for pupils B and C. This was evident during the lesson from reading the observation notes.

Pupil C expressed an improvement in well-being with the adapted seating arrangements as she was able to sit and work with peers, it did not seem to bother her that she was constantly helping her friend with the work, although they did seem to get distracted often which led to conversations irrelevant to the task at hand This is a negative as they could be using this time to complete the task. Armstrong (1966) and Goodman, Gledhill and Ford (2003) suggest how grouping by age can affect certain pupils in a negative way whilst others thrive, not providing a good educational experience. This argument is supported by Meghir, Crawford and Dearden (2007) who describe the age-grouping process as a means to allow pupils to fit the system and not moulding the system to fit the pupils' needs.

By forcing pupils into homogenous age groups we ignore factors such as social, emotional and intellectual maturity. Over time it is detrimental to pupils with birthdays towards the end of the year who have not had time to develop as much as the elder pupils of the same year group (Greenfield, R. L. 2011). Ignoring these factors can be seen as unethical to the pupils as we are not allowing them to flourish in an environment they are comfortable in, or which is better suited to individual development. This was evident when referring to appendix 5i as 2/3 pupils achieved the learning outcome but felt they would benefit more from sitting in mixed ability groups.

Lesson Study 2 – School 2

Throughout the second study pupils were moved and seated in groups of mixed abilities, resulting in no set structure. Pupils were not familiar with this seating arrangement as they were normally seated in same ability groups.

Pupils who attend school in the UK are assessed and then banded or placed in streams dependant on their abilities in literacy and numeracy, this is not the case for all schools but is for a majority (Hallam 2010). Hallam and Toutounji (1996) and Ireson et al (2005) both

explain in their extensive research how ability grouping pupils' in schools can impact their behavioural and academic outcomes. This research is also supported by Kutnick et al (2005) and Smith and Sutherland (2006). (Support for Learning, 2011). Specialists such as Grant (2019), Schoon (2003) and Vygotsky suggest that this form of grouping allows positive encouragement among pupils as they can collaboratively problem solve and feed off each other to gain better understanding and further develop.

In a report from 2011 five headmasters of five schools expressed their opinions on ability grouping, while two of the headmasters saw no disadvantages many other concerns were raised by the remaining headmasters. They believed that ability grouping lowered teachers' expectations of pupils' achievement (relevant to lower ability pupils), highlighted the ability differences between the pupils making them aware of grouping, affecting their confidence and behaviour as a result, created difficulty finding staff to work with the lower ability groups, allowed lower ability pupils to label high achieving pupils as 'geeks', while ability groups rather than mixed ability groups were unable to 'feed-off' (learn from) the pupils with better ability and understanding. (Support for Learning, 2011).

When we reflect on the observation and group interviews, (refer to appendix 5ii) and compare with literature we notice similarities. Pupil C expressed improved well-being from sitting with pupils who would not continuously talk and stray away from the task at hand. Pupil C is in the lower ability group for mathematics but felt that she had produced more work this lesson and it was because she could concentrate on the task at hand. This is supported by the observation notes which outlined how originally pupil C had copied pupil A's work, but after working with pupil A on a couple of questions she gained an understanding and was able to then continue with the problem solving throughout the lesson, suggesting she was able to 'feed off' pupil A who is in a higher ability group, supports Pace and Price (2005) theory that children prosper from mixed ability grouping.

Pupil A's answer to the question also supported the existing research which looks at ability groupings negative effects. We knew before starting the lesson about Pupil A's difficulty with numeracy in comparison to literacy, this was not evident during the first half of the lesson but was much clearer as the difficulty of each problem increased. Fortunately pupil C was able to learn from A at the start and continue the work assisting pupil A to understand the remaining questions. This was confirmed as a positive when Pupil A mentioned how she had enjoyed being able to work with someone in a pair and how she would prefer this seating arrangement to status quo, supporting Vygotsky and Grant (2019) beliefs that pupils collaboratively problem solve.

Pupil B had a slightly different experience to pupils' A and C as he did not enjoy the rearrangement, in appendix 5ii it is evident he did not enjoy sitting on a table full of girls, but also felt as if he was unable to present as much work because of where he was sitting, with the view of the whiteboard restricted. It was evident from observation this was the case as he had asked the teacher for reassurance on his work as he could not see examples on the white board and occasionally was annoyed by the questions his peers asked. After discussion with the teacher it was understood that pupil B enjoyed sitting under usual arrangements as his peer would often complete majority of the work, no one would ask him for help and was able to talk to his friends about things other than the work. Moore and Glyn (1994) explain the positive or negative effect location has on reaching success criteria and pupils questions, findings suggesting this seating arrangement allowed pupil B to teach and explain to the pupils' who were struggling and thus supporting one of the concerns above of children learning from one another, while it had a minor negative effect on his well-being it had a positive effect in meeting the success criteria.

Lesson Study 3 – School 3

In this school the aim was to seat the children based on academic abilities. This is how the children are used to sitting in this school meaning this was a seating arrangement that the pupils are already familiar with. Slavin (1988) and Grant (2019) reported no consistent effects of ability grouping on attainment, with two research syntheses of studies relating to elementary and secondary schools. This suggested that high achievers in many studies saw positive effects from ability grouping at the expense of low achievers but overall, the effects clustered around zero for students at all levels. (Kutnick et al; 2005).

In this study I was the teacher monitoring the understanding, input and progress of pupils. The other practitioners were now the observers. In an educational article there is mention of perceived advantages to mixed ability grouping, explaining how four headmasters of schools felt about this seating plan and what advantages they saw:

Targeting pupils' needs better, allowing the matching of teachers' strengths with pupils' needs, creates homogeneous groups allowing teachers to teach pupils of the same level, enables improvement with the more able students whilst challenging teachers also, encourages sound teaching practice in providing diversity of learning needs, benefits the lower ability pupils, encouraging them to do their best and reduced 'tall poppy syndrome' (pupils not wanting to stand out so under achieve intentionally. (Support for Learning, 2011)

One point highlighted when reading appendix 5iii is how pupil A's feedback on the lesson did not correlate with the practitioners observation, with pupil A claiming to have enjoyed the lesson as he enjoyed the rugby theme and had an interest in mathematics, however one of the practitioners recalls hearing pupil A mention his dislike towards rugby and how he did not enjoy the work. This is not a result of changing seating arrangements or sitting in ability grouping but purely down to the task and agreeing with his peer who had no interest. The pupils on the same table who are in the same ability group were able to explain the work after difficulties pupil A had early on, which is a positive outcome.

Pupil A produced work of high quality towards the end as his mathematic ability is high, and his understanding improved thanks to his peers. This disagrees with Support For Learning's (2011) claim that same ability groups do not allow for 'feeding-off' each other. Pupil A was unhappy with the seating arrangements and did not enjoy being sat next to one of the girls in the class but would rather sit by his previous peer (Appendices 4iii, 5iii).

Pupil B's answers to the same questions were rather different as she did not understand the purpose of the task and was unhappy about sitting in her usual arrangement (low ability group). This supports the comments made by the practitioners on appendix 5iii as it explains how she was constantly being questioned by her peers and attempting to help them, this distracted her from her own work as she focused more on what everyone else was doing. This did not help her peers or herself as she did not completely understand the directions and purpose of the task. In this instance it allowed myself and the classroom assistant to target her needs during the lesson and explain the work to her so that she could understand. As all the low ability students were grouped together it allowed direct teaching while the more able groups continued completing the worksheet. This supports one of the advantages of ability grouping. Through this I understood what my pupils were failing to understand and therefore enabling me to adapt my teaching and resources for specific ability groups. Pupil B went on to explain how she felt she would have performed better if she was on a table with someone from a higher ability group. There are a number of factors to support this as she would likely have less disruption from her peers and concentrate more on the task at hand however when asked where she would like to sit she chose to sit next to her closest peers. This could distract her from her work if discussing things such as plans outside of school, examples of this were evident in schools 1 and 2.

I believe that pupil B would benefit from being moved to sit with someone of a higher ability as it would allow her to learn from the more able pupils, but also focus more on her own work. Although pupil B did not understand the task, she did try her very best. Piaget and Vygotsky believe pupils learn best by making mistakes and from each other. Unlike pupils A

and B it was obvious Pupil C had a strong interest in rugby as he was prepared to answer all questions asked during my introduction. He was very happy with the theme of the work but once everyone began he became distracted by the pupil sitting next to him who had less of an interest in rugby. He was constantly being questioned about the task and had not produced anything for several minutes. When asked if he had produced more work pupil C answered 'no' as he produced what he usually does. Pupil C is in the average ability group and sat by his best friend which meant they did not focus on the task. Further into the lesson pupil C and his friend both helped each other to note down the scores in the table, using pupil C's knowledge of rugby and his friends understanding of how to fill the sheet out they attempted the work again, allowing both to work well as a team and 'feed off' each other.

It is important to seat the right peers next to one another as research demonstrates how a single student's verbal or nonverbal behaviour can cause other group members to become inattentive, explaining how the number of students' affected varied, from one to possibly five, this is an example of ripple effect explained by Kounin (1970). (Felmlee et. Al 1985). I believe pupil C could benefit from sitting next to someone in the same ability group if they are not close friends. After discussion with the other practitioners it became aware to all of us that the usual outcome of this test was not unusual or irregular to normal day to day practice, with the high ability understanding and producing work, the average ability producing enough and the low ability under achieving. There were smaller irregularities such as enjoyment and understanding that were also affected by the theme and the work rather than the seating arrangements.

Conclusion

When analysing the outcomes of all three studies it was clear that in all schools some of the high and average ability pupils were happier with their original seating plans. In School 1 the seating arrangement had changed to age, with pupil A finding the work rather easy due to her natural mathematical ability. This is a result of the lesson not pushing or challenging the pupil enough and therefore not excelling the pupils' pedagogical development. Pupil B school 2 and pupil A school 3 also expressed their preference of the original seating arrangements.

There are comparisons to be made with lower ability pupils in all three schools, with pupils copying peers work, regardless of age, ability or seating arrangement. There were positives for learning from one another, with many lower ability pupils learning from the higher ability and higher pupils gaining understanding from pupils of lower ability. Pupils C and A in school

2 explained to each other how to complete the work. Pupil C who is in the lower ability group was able to thrive and teach pupil A when necessary.

Previously classroom management was seen as the teachers control over the learners but over time has come to be defined as “teachers steering and coordinating a complex environment for the purpose of effective learning and teaching” (Ming-Tak, H. & Wai-Shing, L. 2008: pg- 47). They believe that seating arrangement is a very important within education and go on to say “a good seating arrangement is one which facilitates specific learning tasks and activities and communicates a teacher’s beliefs about learning and teaching”. (S. Zerin 2009)

The Plowden Report (1967) supports this as it recommended and made assumptions that the classroom pedagogy would have a much larger pupil-centred orientation, improving their pedagogical development. In these years’ pupils would have been sat on individual desks with no collaboration but as years went by schools began to introduce tables of all different shapes which serve different purposes where children could sit as groups. Plowden described grouping as a means of occupying or controlling pupils in a class while focusing on individuals and allowing differentiation of pupils by attainment. (Kutnick, 2005)

Despite its widespread practice in schools, research from Grant (2019) and Vygotsky suggests that between-class ability grouping is not an effective strategy for facilitating the optimum academic achievement of pupils, with a headmaster of one school explaining that high ability pupils need other high ability pupils to bounce ideas off one another allowing them to work at their own level. The positives of ability grouping allows teachers to have more input with lower ability students when other ability groups progress. (Support for Learning, 2011). This is evident from lesson study 3.

From all appendices we can see that there have been negative and positive experiences for pupils during the research, with some thriving in one form of seating arrangement and others underachieving. This shows that there is no grouping or seating which will benefit every pupil in the class. Pupils process information differently, what works for one does not necessarily work for the other. It is evident mixed ability grouping benefited all pupils the most in attainment and understanding during the lesson, while only two met the success criteria from seating by age and by ability. This supports Piaget, Vygotsky and Bruner’s theory of scaffolding learning which is far more advantageous for pedagogical development. (Donaldson 2015).

I believe that mixed ability grouping is the most appropriate way of allowing teachers to create lesson plans that are suited to developing independent, capable learners and for pupil well-being. (Donaldson, 2015). There are positive and negative effects for pupil’s

pedagogical development from all seating arrangements, but mixed ability was evidently the more superior arrangement for pupil attainment. More detailed and thorough research is needed for greater understanding of which factors affect the project.

Recommendations

To improve the quality of the results and the overall investigation I believe all classes would have to try all three seating arrangements, based on age, same ability and mixed ability. It is not possible to conduct a fair evaluation if one small school in a rural area tries one seating strategy while a larger school near a city attempts another. We could use one class and test all 3 seating arrangements while collecting data and then repeat this process with the other schools, this would allow us to assess how all three classes reacted to the different seating arrangements. More structure, preparation and research should be carried out before a second investigation to ensure all controlled variables are considered and maintained throughout the study. Variables such as themes, subject, Additional Learning Needs and teachers can affect a pupils' pedagogical development. Other devices such as voice and video recorders would be beneficial during these types of experiments as we can listen back or re-watch the events, giving a more accurate and detailed perception of what is happening during the lesson. Denzin and Lincoln (2011) explain how a larger focus group containing more pupils would be much more beneficial to see the true impact ability grouping has as it would allow more reliable data and validity.

Word Count

$$5,000 + 10\% = 5,500$$

$$5,550 + \text{Additional } 500 \text{ (Three lesson studies)} = 6,000$$

$$\text{Word Count} = 5,990$$

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